Before the

FEDERAL COMMUNICATIONS COMMISSION

Washington, D.C. 20554

In the Matter of	)	
	)	
Connect America Fund	)	WC Docket No. 10-90
	)	

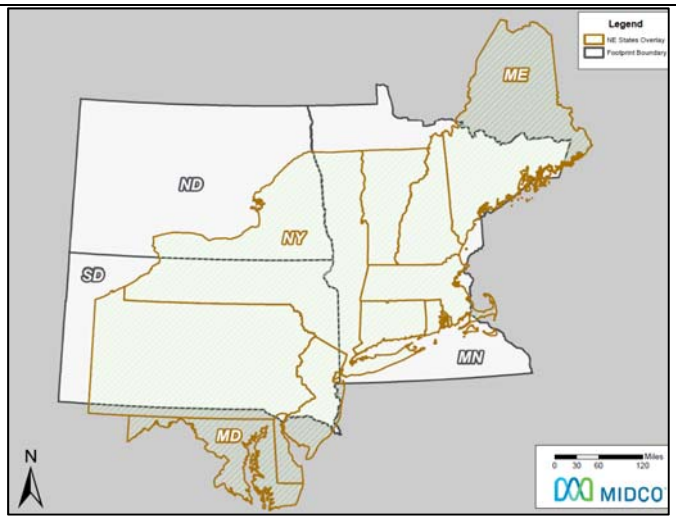
COMMENTS OF MIDCONTINENT COMMUNICATIONS IN SUPPORT OF USTELECOM AND WISPA'S PETITION FOR RECONSIDERATION AND CLARIFICATION

Midcontinent Communications (Midco) supports USTelecom – The Broadband Association and the Wireless Internet Service Providers Association's Petition for Reconsideration and Clarification (the "Petition") in its entirety. The Petition raises important concerns about the testing requirements for recipients of Connect America Fund (CAF) funding.

BACKGROUND

Midco has served the Upper Midwest since 1931 through evolving services including, at various times, services relating to movie theaters, radio, television, telecommunciations, cable, internet, fiber-provided internet services, Hosted VoIP, and, recently through an acquisition, fixed wireless internet services. While we currently provide services in South Dakota, North Dakota, Minnesota, Western Wisconsin, and the Lawrence, Kansas area, the bulk of our footprint is in South Dakota, North Dakota, and Minnesota.

Given our primnary footprint, we know rural America and the Digital Divide that continues in our most rural areas, where fiber is not the solution. As Figure 1 demonstrates, excluding the Twin Cities in Minnesota, we have only 4 million residents in our primary footprint, compared to 61.2 million in a similar geograpic area in the Northeast.



- 61.2 Million in the Northeast
- 7.2 Million in Midco footprint
- 4 Million in Midco footprint excluding the area of St. Paul and Minneapolis, MN

Figure 1: Midco Rural Footprint Illustration

DISCUSSION

I. The Commission should reconsider the CAF testing regimes for latency and speed.

The *Connect America Fund Order* (the "Order") from July of this year[1] creates two separate testing regimes for CAF recipients: (1) latency testing is required for each selected subscriber every minute for six hours a day for seven days each quarter;[2] and (2) speed testing is required for each subscriber once an hour during the six-hour test window.[3] While Midco would need to collect and submit 2,520 latency tests per quarter ***per subscriber*** selected, we would only need to collect and submit 42 speed tests. That equates to a 5,900 percent increase in testing obligations between latency and speed. Writing scripts to extract data, data mining, and analyzing data for speed testing already require significant man hours and other provider resources, and a 5,900 percent increase in latency testing obligations only increases these costs.

[1] *In the Matter of Connect America Fund*, Order, WC Docket No. 10-90, 83 Fed. Reg. 42052, DA 18-710 (July 6, 2018) (the "Order").

[2] *Order*, ¶ 27.

[3] *Id.*, ¶ 28.

The inefficiencies alone created by the varying durations for speed and latency testing justify revisiting the metrics, and the other reasons raised in the Petition further support revisiting and revising the speed and latency testing requirements, including the following:

- The Commission has previously adopted speed and latency testing frameworks that aligned testing parameters.[4]
- The Commission failed to give proper notice as required by the Administrative Procedures Act in enacting the differing metrics.[5]
- The disparity in compliance threshold for latency (95 percent) and speed (80/80) should be consistent at the speed compliance requirements.[6]
- The Commission has created more stringent compliance metrics for speed and latency than for deployment requirements, even though deployment requirements encourage broader broadband coverage in rural America.[7]

Additionally, and as previously acknowledged by the Commission, testing latency every minute could create additional, and unnecessary, traffic on the network.[8] Latency testing will

[4] *See* Petition 6-7 (discussing Public Notice, *Wireline Competition Bureau, Wireless Telecommunications Bureau, and the Office of Engineering and Technology Seek Comment on Proposed Methodology for Connect America High-Cost Universal Service Support Recipients to Measure and Report Speed and Latency Performance to Fixed Locations*, 29 FCC Rcd 12623 (2014) and *Connect America Fund*, Report and Order, 28 FCC Rcd 15060 (2013)).

[5] *See* Petition 5-7.

[6] *See* Petition at 10.

[7] *See* Petition at 9-11.

[8] *See, e.g.*, Public Notice, Comment Sought on Performance Measures for Connect America High-Cost Universal Service Support Recipients, DA 17-1085, 32 FCC Rcd 9321 (rel. Dec. 6, 2017) (*2017 Public Notice*) ¶ 9 ("USTelecom indicates that the Commission's proposal could result in an additional 9Gbps of traffic at some point during the four-hour test window at the core

take significant air time. While the "ping" used to test latency is a small amount of data, the "package" that the ping travels in is 32 bytes. More specifically, while every air package for data sent from the base station to the CPE (Customer Premise Equipment) is 1,500 bytes, the data from the "ping" is only 32 bytes. But the 1,500 byte-package must be used ***every time*** a ping is sent from the CPE to the base station. Requiring latency tests ***every minute*** creates an unnecessarily high volume of traffic on the network. Burdensome latency testing requires additional engineering, equipment, and spectrum to continue providing the advertised and required speeds, and, more importantly, could adversely impact customer performance.

On a more fundamental level, differences in testing duration for speed and latency create unnecessary complexity in an already complex regulatory program. Not only will Midco employees expend more time in compiling the 5,900 percent increase in latency testing data, but the Commission, USAC, and other auditors will also need to expend more time and expense in reviewing the data. Differing speed and latency testing requirements could also dissuade companies from participating in future funding opportunities.

Midco, therefore, encourages the Commission to reconsider the latency testing requirements as described more fully in the Petition.

II. The Commission should reconsider the exclusion of test results due to overprovisioning.

Currently, the Commission includes in its certification calculations any results that are "too slow" but excludes from certification calculations any speed measurements with values greater than 150% of the speed advertised by the carrier.[9] Midco, for example, will fulfill its

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of the network. To what extent would this increase in traffic potentially cause network performance degradation?").

[9] *Order* at n.145 ("To ensure that outlying observations do not unreasonably affect results, we will exclude from certification calculations any speed measurements with values greater than 150% of the advertised speed, because such values are likely invalid. Thus, for a carrier that

CAF Phase II obligations by providing fixed wireless broadband at minimum speeds of 100 Mbps download and 20 Mbps upload (100/20). Under the current rules, the Commission will automatically exclude any speeds of 150/20+ or 100/30+ or some combination thereof.

In testing next-generation 4G LTE Advanced fixed wireless carrier aggregation technology, we know that some customers, including CAF locations, will be able to receive speeds in excess of the advertised 100/20. Figure 2 (previously disclosed in spectrum advocacy) demonstrates the real-world fixed wireless speeds attainable in our network:

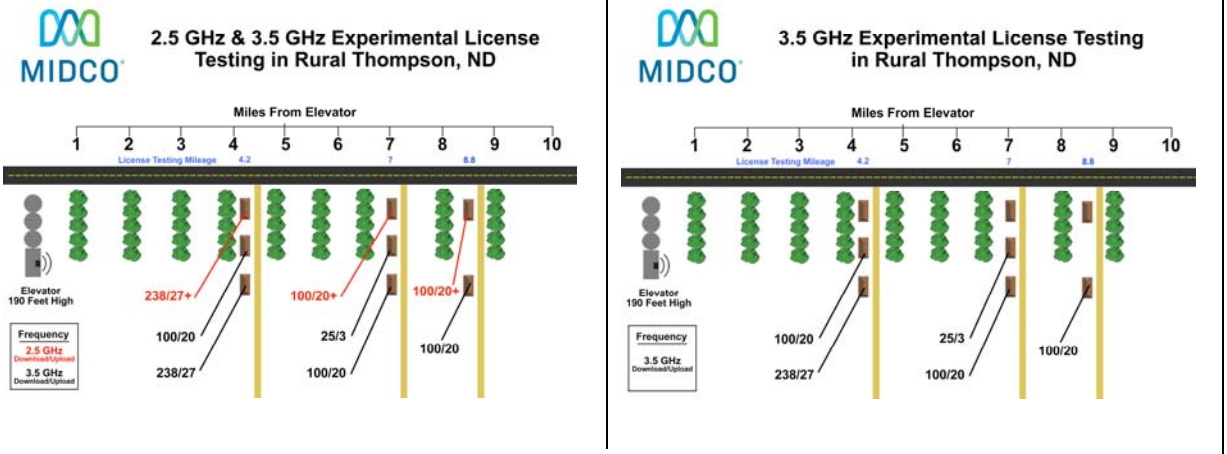

Figure 2: Mid-Band Spectrum Carrier Aggregation Testing

offers 20/3 Mbps service to satisfy its CAF obligation to provide 10/1 Mbps service, we will exclude a download test result showing a value of greater than 30 Mbps (i.e., 150% of the advertised 20 Mbps download speed). We will not automatically exclude test results that are "too slow," because those results likely reflect poor performance or network congestion, rather than fundamental problems with the testing infrastructure. However, if a carrier knows or suspects that the testing infrastructure has failed or has negatively impacted test results, the carrier may submit evidence of the test infrastructure failure with sufficiently detailed information for the Commission to understand its cause and determine the extent to which any test results should be discarded or adjusted when calculating compliance.").

Once the 3.5 GHz Citizens Broadband Radio Service band is available for use, we hope to more broadly deploy carrier aggregation technology throughout footprint, and, as our network allows, provide speeds in excess of 100/20 to our customers, including CAF locations.[10]

While Midco can engineer for and manage the speeds received by our customers on our wireless network, we would prefer that customers are able to receive speeds ***at or above*** the advertised speeds so they receive the best experience possible. Requiring us to artificially engineer a network such that the locations for testing receive no more than 150 percent of the advertised speeds is contrary to public policy and to closing the Digital Divide.

Midco and other providers should be encouraged, not discouraged, to develop and augment their networks to provide the fastest speeds possible. The current compliance certifications work against this public policy by penalizing providers like Midco if their networks can support higher speeds. Excluding speeds that are 150% in excess of advertised speeds is a disincentive for Midco, and other providers, to continually invest in and augment their networks.

Nor has a logical basis been provided for which any reason exists to include speeds that are "too slow" but exclude speeds that are, essentially, "too fast." As noted by the Petition, "[t]he Order's decision to automatically exclude speed measurements above a particular threshold are inconsistent with its simultaneous decision to include speeds below given thresholds."[11] Further, "[t]here is no mathematical rationale for excluding higher speed measurements where the test results will each be counted on a pass/fail basis and where test

[10] Additionally, while we are excited to implement carrier aggregation technology for mid-band spectrum, there will be some areas where we deploy fixed wireless where we may use even higher capacity equipment and spectrum. For example, we are beginning testing of millimeter wave fixed wireless technology wherein the manufacturer has provided specifications of 1Gbps/500Mbps to the customer.

[11] Petition at 18.

results are not averaged."[12] Simply stated, the "conclusion that 'such values [i.e., high speeds] are likely invalid' is incorrect[.]"[13]

For these reasons, Midco strongly urges reconsideration of excluding speed test results that are 150 percent in excess of the advertised speeds.

III. Clarification of some testing mechanics, including "on-net" testing by ETCs and the same panelists for speed and latency would provide much-needed guidance.

Midco supports and incorporates herein the rationale provided in Petition regarding two points of clarification for testing: (1) whether an "FCC-designated IXP" includes on-net servers controlled by the provider, or whether use of a specific FCC-designated IXP is required; and (2) whether the same panelists can be used for both speed and latency testing.[14] The more clarity that can be provided on these issues, the more efficient and streamlined the testing will be for providers. Efficient and streamlined testing benefits not only providers, but also regulators.

Further, allowing on-net servers and the same panelists for speed and latency testing for CAF purposes would align with Midco's internal testing practices. For example, our wireline plant currently uses the Ookla technology[15] for ad hoc testing by our customers, technicians, and customer service representatives. Similarly, our fixed wireless plant uses Ookla technology for ad hoc testing as needed or desired. We host multiple Ookla servers on our network, so we use on-net servers for internal testing. Additionally, we can do speed testing at our fixed wireless base stations when needed, and we run continual latency tests, at least every 5 minutes, on our

[12] Petition at 19.

[13] Petition at 18.

[14] Petition at 18-20.

[15] Ookla is the *de facto* speed test server technology used by ISPs for multiple technologies used in providing internet services.

fixed wireless system. All of this testing, hosted on-net, is available to our engineers, Network Operations Center (NOC), and customer service to use in supporting customers and augmenting our network when needed.

We also have plans to improve internal testing. For example, for our wireline plant, we will use a modem with testing software installed that runs speed and latency testing every six hours. We have also started preliminary talks with our fixed wireless vendors to have similar technology for on-net testing.

Stated differently, we have a real-world and logistical preference to have on-net testing since we are currently doing on-net testing and using the results of such testing to augment our network and provide high-quality services to our customers. It is, therefore, unnecessarily burdensome to also require testing to FCC-designated servers. Further, it is difficult to control capacity and routing to FCC servers, unless we could host an FCC server on our network.

Midco, therefore, urges the Commission to provide the clarifications as requested in the Petition.

CONCLUSION

For the reasons stated above, Midco urges reconsideration and clarification of the issues raised in the Petition.

November 7, 2018.

Respectfully submitted,

MIDCONTINENT COMMUNICATIONS

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